



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

X

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/215,095	12/18/1998	NATHANIEL T. BECKER	GC507-2	7801
5100	7590	05/08/2006	EXAMINER	
GENENCOR INTERNATIONAL, INC.			BORIN, MICHAEL L	
ATTENTION: LEGAL DEPARTMENT			ART UNIT	PAPER NUMBER
925 PAGE MILL ROAD				
PALO ALTO, CA 94304			1631	

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**MAILED**

**MAY 08 2006**

**GROUP 1600**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/215,095

Filing Date: December 18, 1998

Appellant(s): BECKER ET AL.

---

Janet Kaiser Castaneda  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 02/13/2006 appealing from the Office action mailed 11/19/2004.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

US 5,324,649 (Arnold et al.), June 28, 1994

US 5,254,287 (Deleev et al.) , October 19,1993

US 5,260,074 (Sipos et al.), November 9, 1993

**(9) Grounds of Rejection**

Claims 66-69, 72-76, 78-107 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Arnold et al. (US Patent 5,324,649) in view of US 5,254,287, or US 5,260,074.

The instant claims, to the extent they are directed to the elected species<sup>1</sup>, are drawn to a granule comprising a seed particle, matrix layer comprising protein mixed with sugar and a polysaccharide, and a barrier or coating layer. Further, the matrix may contain a synthetic polymer (e.g., vinyl polymer), and the either the core or the granule can have coating (e.g., vinyl polymer or cellulose derivative).

**Arnold**

The reference teaches enzyme-containing granules which comprise a core having a seed particle in it (col. 4, line 13), and protein (enzyme) matrix surrounding it (col. 5-6). The enzyme layer may further comprise plastisizers, such as sugars or sugar alcohols (col. 6, lines 13,14). In addition, the granules may contain other adjunct ingredients, such as enzyme protecting agents (col. 7, lines 46-51).

Further, both the core and the enzyme layer can contain coating comprising a vinyl polymer or vinyl copolymer (col. 6). Also, synthetic polymer, such as PVA can be added to the enzyme matrix (col. 5, lines 53-55). In addition, proteins, such as casein, albumin, etc. may be used as adjunct ingredients (col. 7, last paragraph). The enzyme can be selected, for example, from proteases, amylases, lipases, cellulases. The enzyme matrix contains, besides the enzyme itself, other peptides and proteins (col. 5, line 36,37).

Arnold does not specifically teach use of polysaccharides. However, the reference teaches that the granules may contain adjunct ingredients, in particular

---

<sup>1</sup> "sugar" is elected from a group "sugar or sugar alcohol"

Art Unit: 1631

enzyme protective agents. Thus, as stability of enzyme in enzyme granules is a desirable effect, it would be *prima facie* obvious to add an enzyme protective agent to the enzyme matrix. Selection of various enzyme protective agents would be obvious to an artisan. One of often used enzyme stabilizers used in enzyme granules is starch. Use of starch in enzyme granules is exemplified by disclosures of US 5,254,287 (col. 4, line 22) and US 5,260,074 (col. 1, lines 51-54). Addition of starch to granules disclosed in Arnold will result in the invention as instantly claimed.

As for intended use of polysaccharide as "structuring agent", motivation in the prior art to combine references need not be identical to that of the applicant to establish obviousness. *In re Kemps*, 40 USPQ2d 1309 (Fed. Cir., 1996).

Further, if there are any differences between Applicant's claimed granules and that of the prior art, the differences would appear minor in nature. Selection of particular enzymes to be granulated and their amounts, or selection of particular sugars as plasticizers, or selection of particular barrier layer materials would be obvious for an artisan to be achieved in a way of ordinary optimization.

#### **(10) Response to Argument**

Appellant argues that Arnold et al. does not specify how and where to add such adjunct ingredient as starch and that Arnold would not provide motivation to a skilled artisan to use a layer made of solution of a polysaccharide structuring agent mixed together with a sugar added to protein solution to form a matrix for protein. Further,

---

appellant argues that Arnold does not teach amount of adjunct ingredients, or advantages of particular adjunct ingredient. With respect to adding enzyme stabilizers (i.e., one of "adjunct ingredient" recited in the reference), the need for use enzyme stabilizers to improve enzyme's storage in compositions is well known in the art and is also addressed by appellant in the Brief (p. 6). Therefore, an artisan would be motivated to add such adjunct ingredient to the granules of Arnold which otherwise read on the granules as claimed. already As to "amounts of adjunct ingredients", the instant claims are not directed to any particular amounts.

Further, selection of any of known functionally equivalent enzyme stabilizers would be obvious to an artisan. With respect to the secondary references, US 5,254,287 and US 5,260,074, the patents were cited merely to demonstrate that starch is indeed being used as an enzyme stabilizers in enzyme granules.

Appellant also argues that the granules of the invention have superior stability and lower dust compared to granules described in Arnold. First, appellant is attempting to demonstrate unexpected results compared to the primary reference alone. Second, as communicated earlier, Examiner failed to find in the specification that any of the working examples represent granules of Arnold, and that Table 1 compares granules of the invention with the granules of Arnold.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Michael Borin  
Primary Examiner



Conferees:

Ardin Marshel  
Supervisory Primary Examiner



ARDIN H. MARSCHEL  
SUPERVISORY PATENT EXAMINER

Bruce Campell  
Supervisory Primary Examiner



BRUCE R. CAMPELL, PH.D  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600